

**TECHNICAL REVIEW DOCUMENT**  
**For**  
**REOPENING/MODIFICATION OF OPERATING PERMIT 950PPB097**

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CF&I Steel, L.P. dba EVRAZ Rocky Mountain Steel (ERMS)  
Steelmaking  
Pueblo County  
Source ID 1010048

June - August 2012

Operating Permit Engineer:	Blue Parish
Operating Permit Supervisor review:	Matthew S. Burgett
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**I. Purpose**

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the reopening and modification of the Steelmaking Operating Permit at the ERMS Steel Mill Facility. The Division issued a combined PSD and renewed Operating Permit on December 28, 2010; this permit expires on December 28, 2015. During processing of the combined permit, a petition was filed by WildEarth Guardians on March 24, 2011 requesting that EPA object to the issuance of the permit. On May 31, 2012, EPA responded to that petition, partially granting and partially denying the petition to object to the combined permit, and directing the Division to amend the permit and permit record. The Division is therefore reopening and modifying the permit as required by the Order. This modification is subject to the reopening provisions in Colorado Regulation No. 3, including a 30-day public comment period and a 45-day EPA review period. In accordance with the requirements in Colorado Regulation No. 3, Part C, Section XIII.A.6, only those provisions for which there is cause to reopen are subject to the reopening procedures. Therefore, only the provisions that are specifically identified as part of the reopening (described in detail in Section VI) are subject to public comment.

This document is designed for reference during the review of the proposed permit by the EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on EPA's May 31, 2012 Order Responding to Petitioner's Request that the Administrator Object to the Issuance of a State Operating Permit (Order) and additional information submitted by ERMS (received electronically on July 5, 2012). Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.colorado.gov/cs/Satellite/CDPHE-AP/CBON/1251596446069>. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

## **II. Description of Permit Modification Request/Modification Type**

The U.S. EPA issued an Order on May 31, 2012 that partially grants a Petition (Petition No VIII-2011-01) for objection to the December 28, 2010 combined permit (the Permit). The Order grants or partially grants issues raised by the Petitioner in the following categories: Electric Arc Furnace (EAF) Regulations, and National Ambient Air Quality Standards (NAAQS).

The Order identifies deficiencies in both the permit and the permit record concerning the EAF Regulations, but only permit record deficiencies were identified for the NAAQS issues. The Division intends to address the permit and permit record issues related to the EAF Regulations by reopening and revising the permit to include the appropriate applicable requirements. Because the Order does not direct the Division to amend the permit with respect to the NAAQS issues, they will not be addressed by this reopening process. The NAAQS issues will be addressed in a separate response to the EPA Order since the Division does not believe changes to the permit are required to address the NAAQS issues.

Concerning the EAF Regulations, the Order specifically addressed the Petitioner's issues regarding two plans required by and/or allowed as compliance options under 40 CFR 63 Subpart YYYYYY - National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities:

1. Pollution Prevention Plan (§63.10685(a)(1))
2. A plan demonstrating the manner through which the facility is participating in an EPA-approved program for removal of mercury switches from vehicle scrap (§63.10685(b)(2)(iv), referred to as the "on-site plan" in the petition)

The Order directed the Division to complete the following tasks:

- Include the Pollution Prevention Plan (PPP) in the permit and ensure that the permit contains appropriate compliance certification testing, monitoring, reporting and recordkeeping requirements to assure compliance with the permit terms related to the PPP
- Amend the Permit to include a requirement to develop and maintain an "on-site plan"

- Consider whether additional recordkeeping, monitoring or reporting is necessary to assure compliance with the requirement to develop and maintain the “on-site plan”
- Revise the permit record to identify whether an “on-site plan” exists and whether it is sufficient to satisfy the requirements of 40 CFR § 63.10685(b)(2)(iv) or 40 CFR § 63.10685(b)(2) as a whole.
- Correct typographical errors in the regulatory citations for permit conditions 1.20.3, 1.20.3.1 and 1.20.3.2 (these Subpart YYYYY citations incorrectly refer to 40 CFR Part 60 instead of Part 63).

The Division is addressing these directives as described in detail in Section III and VI.

### **III. Applicability of Clean Air Act Section 112 Requirements to the Electric Arc Furnace**

National Emission Standards for Hazardous Air Pollutants – Section 112(d), as promulgated in 40 CFR Part 63

EAF steelmaking facilities that are area (i.e., non-major) sources of Hazardous Air Pollutants (HAPs) are subject to Subpart YYYYY of Part 63. Major sources of HAP are those sources that emit or have the potential to emit 10 tons per year or more of any individual HAP or 25 tons per year or more of any combination of HAPs.

Following the issuance of the Permit in December 2010, ERMS conducted stack tests in accordance with the requirements of the Permit (Section II, Condition 1.18) on the EAF and the Ladle Metallurgy Station (LMS) in May and September, 2011. The tests measured emissions of Hydrogen Fluoride (HF), which is a HAP. The results of the stack tests indicated that the facility is a major source of HAP (see Section VII at the end of this document for a summary of the stack test results). Subpart YYYYY is not applicable to major HAP Sources.

Part 63 does not include requirements for EAF steelmaking facilities that are major sources or are located at major sources of HAP.

Equivalent Emission Limits by Permit – Section 112(j)

Section 112(c)(1) of the Clean Air Act requires that EPA establish a list of categories and subcategories of major and area sources of HAP, and Section 112(c)(2) requires EPA to establish standards for those categories. The requirements to promulgate regulations that establish those standards are in Section 112(d), and the schedule by which they must be promulgated is in Section 112(e).

In the event that EPA fails to promulgate a standard for a major source category listed in Section 112(c) by the deadline in Section 112(e), Section 112(j) requires the owner or operator of that source to obtain an equivalent emission limitation by permit. The limitation would be determined on a case-by-case basis and should be equivalent to any limit the EPA would have included in a Federal MACT standard, had it been promulgated. Section 112(j) is commonly referred to as the “MACT Hammer.”

The initial list of source categories under Section 112(c) was published on July 16, 1992 (57 FR 31576) and a promulgation schedule was published on December 3, 1993 (58 FR 63941). The initial list included a category for “Non-Stainless Steel Manufacturing - Electric Arc Furnace (EAF) Operation” with a promulgation date of November 15, 1997. EPA later deleted this source category from the list on June 4, 1996 (61 FR 28197); therefore, Section 112(j) requirements do not apply.

#### Case-by-Case MACT – Section 112(g)

Section 112(g) addresses major HAP sources for which EPA has not yet issued a MACT standard. Note that this is different than 112(j), which is limited to the specific list of source categories established under Section 112(c). Specifically, Section 112(g)(2)(B) requires sources that are new or reconstructed after the date of the applicable Title V Permit Program to apply MACT. MACT is to be determined on a case-by-case basis when no limitations have been established by the Administrator.

The requirements of §§63.40 through 63.44 of 40 CFR Part 63, Subpart B carry out Section 112(g)(2)(B) (§63.40(a)). §63.40(e) states:

*Exclusion for stationary sources in deleted source categories.* The requirements of this subpart do not apply to stationary sources that are within a source category that has been deleted from the source category list pursuant to section 112(c)(9) of the Act.

Section 112(c)(9) of the Act allows the EPA to delete any source category from the list on petition or on the EPA’s own motion. Because EPA deleted the Non-Stainless Steel Manufacturing - Electric Arc Furnace (EAF) Operation source category from the list on June 4, 1996 (61 FR 28197); the ERMS Steelmaking facility is exempt from the 112(g) requirements pursuant to 40 CFR 63.40(e).

#### **IV. Applicability of Clean Air Act Section 112 Requirements to Other Emission Units**

Because the facility is now determined to be a major source of HAP emissions, the Division has evaluated the remaining emission units covered by the Permit to determine what, if any, additional requirements apply. The remaining units fall into two categories: (1) boilers and process heaters that are subject to or exempt from 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, and (2) units for which there are no promulgated standards and are exempt from Section 112(g) based on their construction date.

As specified in 40 CFR 63.40(b), the requirements of Section 112(g)(2)(B) apply to any owner or operator who constructs or reconstructs a major source of HAP after the effective date of section 112(g)(2)(B). The effective date of section 112(g)(2)(B) in a State or local jurisdiction means the effective date specified by the permitting authority at the time the permitting authority adopts a program to implement section 112(g) with respect to construction or reconstruction or major sources of HAP, or June 29, 1998 whichever is earlier. The effective date of Section 112(g) in Colorado is June 29, 1998. Note that the definition of “major source” applies to the specific process or production unit rather than the entire facility in the case where a new process or production unit is

added to an existing facility. As shown in the table below, all emission units that are not subject to or exempted from Subpart DDDDD were constructed prior to June 29, 1998; therefore, Section 112(g) does not apply.

**95OPPB097 Units Other than EAF – Clean Air Act Section 112 Applicability**

Unit	Regulated by 40 CFR Part 63?	112(g) Applicability <sup>1</sup>
Round Caster, including Tundish Preheater and Cutting Torches	No <sup>2</sup>	NA – units were in service by 1975 and 1980
Ladle Metalurgy Station	No	NA – unit was in service by 1995
Vacuum Tank Degasser	No	NA – unit was in service by 1994
Vacuum Tank Degasser Boiler	Yes – Subpart DDDDD	NA – regulated under Subpart DDDDD
Trestle Unloading	No	NA – unit was in service prior to February 1, 1972
Three Ladle Preheat Burners	No <sup>2</sup>	NA – units were in service by 1973
Reline Ladle Refractory Process	No <sup>2</sup>	NA – process was in place by 1973
EAF Wind Erosion	No	NA – process was in service prior to February 1, 1972
Particulate emission sources listed as Insignificant in the December 28, 2010 issuance of the Permit <ul style="list-style-type: none"> <li>Slag removal, storage of HBI (briquetted iron), and bucket loading</li> <li>Flux Hoppers</li> <li>Baghouse Dust Handling</li> </ul>	No	NA – equipment/activities were in service by 1995
Fuel burning activities listed as Insignificant in the December 28, 2010 issuance of the Permit <ul style="list-style-type: none"> <li>Gaseous Fuel Burning Equipment ≤ 5 MMBtu/hr</li> <li>Gaseous Fuel Burning Equipment ≤ 10 MMBtu/hr used for heating buildings/personal comfort</li> <li>35 – 45 miscellaneous heaters ranging in size from 0.02 – 0.25 MMBtu/hr</li> </ul>	No <sup>2</sup>	NA – equipment/activities were in service by 1995, and/or are exempted from requirements under Subpart DDDDD.

<sup>1</sup>Dates identified are from the Preliminary Analysis for Construction Permit 08PB1241 (Ladle Preheat Burners), the Preliminary Analysis for Construction Permit 09PB0883 (Reline Ladle Refractory Process), and the November 1995 Title V application (all other units).

<sup>2</sup>This unit includes or qualifies as a process heater that is used for space and comfort heating, and/or uses a direct method of heat transfer, which does not meet the definition of Process Heater under 40 CFR 63.7575, and is therefore not subject to requirements under 40 CFR 63 Subpart DDDDD. Subpart DDDDD only includes requirements for process heaters using indirect methods of heat transfer.

**V. 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters**

The vacuum tank degasser boiler is subject to the requirements for natural-gas fired units greater than 10 MMBtu/hr under Subpart DDDDD. As shown in Section IV, the remaining fuel burning activities listed under the Permit do not satisfy the definition of process heaters under §63.7575 because they are either space heaters, comfort heaters, or because they use a direct method of heat transfer.

Subpart DDDDD applies to industrial, commercial or institutional boilers and process heaters at major sources of HAP. EPA published Subpart DDDDD as a final rule on March 21, 2011 (76 FR 15608). On the same day, EPA also published a proposed notice of reconsideration of Subpart DDDDD (76 FR 15249). On May 18, 2011, EPA delayed the effective dates for the March 21, 2011 version of Subpart DDDDD “until the proceedings for judicial review of these rules are completed or the EPA completes its reconsideration of the rules, whichever is earlier” (76 FR 28662). The reconsideration of the rule was then published on December 23, 2011 as a new proposed rule (76 FR 80598). However, on January 9, 2012, the U.S. District Court for the DC circuit vacated the delay of the effective dates of the March 2011 rule.

The March 2011 version of the rule required sources that started up before May 20, 2011 to submit an initial notification by September 17, 2011. Since the delay was published before this date, many sources did not submit initial notifications. The vacatur of that delay did not occur until after the date on which the original initial notification was due. Therefore, sources that had originally relied on the delay found themselves out of compliance with the September 17, 2011 deadline as soon as the vacatur took place on January 9, 2012. To address this situation, EPA issued a No Action Assurance (NAA) letter<sup>1</sup> on February 7, 2012, which provided assurance that no action would be taken for failure to submit an initial notification by the date required. This no action assurance will be in effect until December 31, 2012 or until the effective date of the final rule addressing the proposed reconsideration Subpart DDDDD. EPA has stated in this letter that they intend to finalize the reconsideration in the spring of 2012 (the reconsideration has not been finalized as of October 1, 2012).

The Division has included the March 21, 2011 version of the rule in the Permit. Based on a review of the proposed rule it does not appear that the requirements will change much, if at all, for the affected unit at this facility, but a note was added to the Subpart DDDDD condition to indicate that the requirements may change in the future when the rule is finalized. Neither the March nor the December versions of the rule include emission or operating limits for existing (constructed prior to June 4, 2010) natural gas-fired units. Instead, the following work practices are required for existing gas-fired boilers greater than or equal to 10 MMBtu/hr: annual tune-ups, and a one-time energy assessment.

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<sup>1</sup> [http://www.epa.gov/ttn/atw/boiler/boiler\\_ciswi-no\\_action\\_2012-02-07.pdf](http://www.epa.gov/ttn/atw/boiler/boiler_ciswi-no_action_2012-02-07.pdf)

## **VI. Discussion of Modifications Made**

### EPA-Mandated Modifications

Because the area source requirements of 40 CFR 63 Subpart YYYYYY do not apply to the ERMS Steelmaking facility, the Division has removed them from the draft permit for this reopening action. The Division considers that the establishment of non-applicability of Subpart YYYYYY, 112(g) and 112(j) requirements as described in Section III above satisfies the directives of the EPA Order with respect to the Subpart YYYYYY issues raised in the Petition. The permit was modified as follows:

- Section II, Condition 1.20 was deleted, and subsequent conditions (1.21 – 1.25) were renumbered accordingly
- Condition number references were updated in other locations to reflect the new numbering sequence, including: Section I, Conditions 9 and 10.

### Other Modifications

In addition to the EPA-mandated modifications, the Division has included the following changes to address the major source HAP status of the facility and to include the applicable requirements of 40 CFR Part 63 Subpart DDDDD:

- Section II, Condition 11 was deleted; this condition limited HAP emissions to below major source thresholds. This condition is now replaced with the new Condition No. 11 that addresses major source Subpart DDDDD requirements.
- Added Condition 5.8 to Section II to establish that the vacuum tank degasser boiler is subject to the new Subpart DDDDD requirements in Condition 11.

The Division has also modified the lead limit for the Ladle Metallurgy Station (LMS) in Section II, Condition 3.1. The previously issued permit included a limit of 0.0012 tons per year (2.4 pounds). The emission rate observed during a stack testing event on May 4-5, 2011 was  $4.15 \times 10^{-7}$  pounds per ton of steel produced, which would be equivalent to 5.6 pounds per year at a maximum permitted production rate of 1,350,000 tons of steel. ERMS subsequently submitted an APEN on April 18, 2012 requesting a new lead limit of 8.54 pounds per year (0.00427 tons per year). This limit is incorporated into the revised permit, and the associated compliance emission factor is revised accordingly.

In addition to the modifications described above, the Division has included additional changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this reopening.

### Section I – General Activities and Summary

- Revised the language in Condition 1.4 to update the conditions that are currently state-only enforceable.

#### Section IV – General Permit Conditions

- Updated the general permit conditions to the current version (5/22/2012).

#### Appendices

- Included a description of the modifications resulting from this reopening in Appendix F.
- Updated the contact information in Appendix D.

#### **VII. Stack Test Data – HF Emissions for the Electric Arc Furnace and Ladle Metallurgy Station**

<b>Date</b>	<b>Baghouse 4 (EAF)</b>	<b>Baghouse 3 (EAF)</b>	<b>LMS Baghouse</b>
May 4 – 5, 2011	0.65 tons per year	5.76 tons per year	7.29 tons per year
September 20 – 23, 2011	0.73 tons per year	29.7 tons per year	26.1 tons per year

Results shown are based on the rate observed during the tests (lbs HF per ton of steel produced) and an annual steel production rate of 1.35 million tons.

The source submitted an APEN received June 5, 2012 reporting HF emissions for the EAF to be 39.9 tons per year (for baghouses 3 and 4 combined).